

Claims

- [c1] What is claimed is:
- 1.A liquid crystal display panel comprising an upper substrate, a lower substrate, and a plurality of pixels located between the upper substrate and the lower substrate, each of the pixels having at least a compensating capacitor for providing an approximately identical feed-through voltage for each of the pixels.
- [c2] 2.The liquid crystal display panel of claim 1 further comprising a first scanning line, a second scanning line, and a scanning line driving circuit, each of the pixels being located between the first scanning line and the second scanning line, each of the first scanning line and the second scanning line having a first input end so that the scanning line driving circuit can input signals into the first scanning line and the second scanning line through the first input ends.
- [c3] 3.The liquid crystal display panel of claim 2 wherein a capacitance of each of the compensating capacitors is increased when a distance between the pixels and the first input end of the second scanning line is increased.
- [c4] 4.The liquid crystal display panel of claim 3 wherein each of the pixels further comprises:
- a liquid crystal cell having a common electrode, a pixel electrode connected to the corresponding compensating capacitor, and a liquid crystal layer disposed between the pixel electrode and the common electrode; and
- a thin film transistor having a gate electrode connected to the first scanning line, a drain electrode connected to a corresponding first data line, and a source electrode connected to the pixel electrode.
- [c5] 5.The liquid crystal display panel of claim 4 wherein each of the compensating capacitors is composed of a first overlapping region, which is formed by overlapping the corresponding pixel electrode over the first scanning line.
- [c6] 6.The liquid crystal display panel of claim 5 wherein an area of each of the first overlapping regions is increased as a distance between the first input end of the first scanning line and the pixel corresponding to each of the first overlapping

regions is increased.

- [c7] 7.The liquid crystal display panel of claim 4 wherein each of the compensating capacitors is composed of a second overlapping region, which is formed by overlapping the corresponding source electrode over the corresponding gate electrode.
- [c8] 8.The liquid crystal display panel of claim 7 wherein an area of each of the second overlapping regions is increased as a distance between the first input end of the first scanning line and the pixel corresponding to each of the second overlapping regions is increased.
- [c9] 9.The liquid crystal display panel of claim 7 wherein each of the pixels further comprises a storage capacitor, and a capacitance of each of the storage capacitors is reduced as a distance between each of the storage capacitors and the first input end of the second scanning line is increased.
- [c10] 10. The liquid crystal display panel of claim 1 further comprising a second data line and a data line driving circuit, each of the pixels being connected to the second data line, which has a second input end so that the data line driving circuit can input signals into the second data line through the second input end.
- [c11] 11.The liquid crystal display panel of claim 10 wherein a capacitance of each of the compensating capacitors is increased as a distance between each of the compensating capacitors and the second input end is increased.
- [c12] 12.The liquid crystal display panel of claim 11 wherein each of the pixels is located between a third scanning line and a fourth scanning line, and further comprises:
a liquid crystal cell having a common electrode,a pixel electrode connected to the corresponding compensating capacitor, and a liquid crystal layer disposed between the pixel electrode and the common electrode; and
a thin film transistor having a gate electrode connected to the corresponding third scanning line, a drain electrode connected to the second data line, and a source electrode connected to the pixel electrode.

- [c13] 13.The liquid crystal display panel of claim 12 wherein each of the compensating capacitors is composed of a first overlapping region, which is formed by overlapping the corresponding pixel electrode over the corresponding third scanning line.
- [c14] 14.The liquid crystal display panel of claim 13 wherein an area of each of the first overlapping regions is increased as a distance between the second input end and the pixel corresponding to each of the first overlapping regions is increased.
- [c15] 15.The liquid crystal display panel of claim 12 wherein each of the compensating capacitors is composed of a second overlapping region, which is formed by overlapping the corresponding source electrode over the corresponding gate electrode.
- [c16] 16.The liquid crystal display panel of claim 15 wherein an area of each of the second overlapping regions is increased as a distance between the second input end and the pixel corresponding to each of the second overlapping regions is increased.
- [c17] 17.The liquid crystal display panel of claim 12 wherein each of the pixels further comprises a storage capacitor, and a capacitance of each of the storage capacitors is reduced as a distance between each of the storage capacitors and the second input end is increased.
- [c18] 18.A liquid crystal display panel comprising:
a plurality of scanning lines;
a plurality of data lines; and
a plurality of pixels, each of the pixels having a pixel electrode, and a thin film transistor having a gate electrode connected to the corresponding scanning line, a drain electrode connected to the corresponding data line, and a source electrode connected to the pixel electrode, wherein a first overlapping region is formed by overlapping the pixel electrode over the corresponding scanning line; wherein an area of each of the first overlapping regions is increased gradually along a first direction.

- [c19] 19.The liquid crystal display panel of claim 18 wherein each of the first overlapping region forms a compensating capacitor for providing an approximately identical feed-through voltage for each of the pixels, thus reducing a flicker effect of the liquid crystal display panel.
- [c20] 20.The liquid crystal display panel of claim 18 wherein each of the pixel electrodes comprises a first extending portion partially overlapping the corresponding scanning line so as to form each of the first overlapping regions.
- [c21] 21.The liquid crystal display panel of claim 18 wherein each of the pixel electrodes partially overlaps a second extending portion of the corresponding scanning line so as to form each of the first overlapping regions.
- [c22] 22.The liquid crystal display panel of claim 21 wherein a protrusion structure is disposed on each of the pixel electrodes and above the corresponding second extending portion, for regulating an alignment direction of liquid crystal molecules.
- [c23] 23.The liquid crystal display panel of claim 18 further comprising a scanning line driving circuit and a data line driving circuit, wherein the scanning line driving circuit inputs signals into each of the scanning lines through a first input end of each of the scanning lines, and the data line driving circuit inputs signals into each of the data lines through a second input end of each of the data lines.
- [c24] 24.The liquid crystal display panel of claim 23 wherein the first direction is parallel to each of the scanning lines, and an area of each of the first overlapping regions is increased as a distance between each of the first overlapping regions and the first input end of the scanning line corresponding to each of the first overlapping regions is increased.
- [c25] 25.The liquid crystal display panel of claim 23 wherein the first direction is parallel to each of the data lines, and an area of each of the first overlapping regions is increased as a distance between each of the first overlapping regions and the second input end of the data line corresponding to each of the first overlapping regions is increased.

- [c26] 26.The liquid crystal display panel of claim 23 wherein a second overlapping region is formed by overlapping each of the source electrodes over the corresponding gate electrode of each of the source electrodes.
- [c27] 27.The liquid crystal display panel of claim 26 wherein each of the second overlapping regions forms a compensating capacitor for providing an approximately identical feed-through voltage for each of the pixels, thus reducing a flicker effect of the liquid crystal display panel.
- [c28] 28.The liquid crystal display panel of claim 27 wherein an area of each of the second overlapping regions is increased as a distance between each of the second overlapping regions and the first input end of the scanning line corresponding to each of the second overlapping regions is increased.
- [c29] 29.The liquid crystal display panel of claim 27 wherein an area of each of the second overlapping regions is increased as a distance between each of the second overlapping regions and the second input end of the data line corresponding to each of the second overlapping regions is increased.
- [c30] 30.A liquid crystal display panel comprising:
a scanning line driving circuit;
at least a scanning line connected to the scanning line driving circuit;
a first region positioned on the scanning line having at least a first pixel, which comprises a first pixel electrode, a first overlapping region being formed by overlapping the first pixel electrode over the scanning line; and
a second region positioned on the scanning line having at least a second pixel, which comprises a second pixel electrode, a second overlapping region being formed by overlapping the second pixel electrode over the scanning line;
wherein the first region is located between the scanning line driving circuit and the second region, and an area of the second overlapping region is larger than an area of the first overlapping region.
- [c31] 31.The liquid crystal display panel of claim 30 wherein the first pixel further comprises a first thin film transistor, which includes a first gate electrode connected to the scanning line, a first drain electrode connected to a first data

line, and a first source electrode connected to the first pixel electrode, and a third overlapping region is formed by overlapping the first source electrode over the first gate electrode.

[c32] 32.The liquid crystal display panel of claim 31 wherein the second pixel further comprises a second thin film transistor, which includes a second gate electrode connected to the scanning line, a second drain electrode connected to a second data line, and a second source electrode connected to the second pixel electrode, and a fourth overlapping region is formed by overlapping the second source electrode over the second gate electrode.

[c33] 33.The liquid crystal display panel of claim 32 wherein an area of the fourth overlapping region is larger than an area of the third overlapping region.

[c34] 34.A liquid crystal display panel comprising:
a data line driving circuit;
at least a data line connected to the data line driving circuit;
a first region positioned on the data line having at least a first thin film transistor, which comprises a first gate electrode connected to a first scanning line, a first drain electrode connected to the data line, and a first source electrode connected to a first pixel electrode, a first overlapping region being formed by overlapping the first pixel electrode over the first scanning line; and
a second region positioned on the data line having at least a second thin film transistor, which comprises a second gate electrode connected to a second scanning line, a second drain electrode connected to the data line, and a second source electrode connected to a second pixel electrode, a second overlapping region being formed by overlapping the second pixel electrode over the second scanning line;
wherein the first region is located between the data line driving circuit and the second region, and an area of the second overlapping region is larger than an area of the first overlapping region.

[c35] 35.The liquid crystal display panel of claim 34 wherein a third overlapping region is formed by overlapping the first source electrode over the first gate electrode, a fourth overlapping region is formed by overlapping the second

source electrode over the second gate electrode, and an area of the fourth overlapping region is larger than an area of the third overlapping region.

[c36] 36. The liquid crystal display panel of claim 34 wherein the first region comprises a plurality of first thin film transistors, and an area of each of the first overlapping regions is increased as a distance between the data line driving circuit and the first thin film transistor corresponding to each of the first overlapping regions is increased.

[c37] 37. The liquid crystal display panel of claim 34 wherein the second region comprises a plurality of second thin film transistors, and an area of each of the second overlapping regions is increased as a distance between the data line driving circuit and the second thin film transistor corresponding to each of the second overlapping regions is increased.

[c38] 38. A liquid crystal display panel comprising:
a plurality of scanning lines for transmitting scanning signals from a scanning line driving circuit;
a plurality of data lines for transmitting image signals from a data line driving circuit; and
a plurality of pixels, each of the pixels comprising:
a liquid crystal capacitor;
a thin film transistor electrically connected to the corresponding scanning line, the corresponding data line, and the liquid crystal capacitor; and
a compensating capacitor electrically connected between the liquid crystal capacitor and the corresponding scanning line, being connected to the thin film transistor, for providing an approximately identical feed-through voltage for each of the pixels.

[c39] 39. The liquid crystal display panel of claim 38 wherein a capacitance of each of the compensating capacitors is increased as a distance between each of the pixels and the scanning line driving circuit is increased.

[c40] 40. The liquid crystal display panel of claim 38 wherein a capacitance of each of the compensating capacitors is increased as a distance between each of the

pixels and the data line driving circuit is increased.

[c41] 41.The liquid crystal display panel of claim 38 further comprising a storage capacitor connected to the liquid crystal capacitor.

[c42] 42.The liquid crystal display panel of claim 41 wherein a capacitance of each of the storage capacitors is reduced as a distance between each of the storage capacitors and the scanning line driving circuit is increased.

[c43] 43.The liquid crystal display panel of claim 41 wherein a capacitance of each of the storage capacitors is reduced as a distance between each of the storage capacitors and the data line driving circuit is increased.